REMARKS

As an initial matter, Applicants would like to thank Examiner Padgett for taking the time to personally interview the instant case on October 6, 2011, with Applicants' undersigned counsel to discuss the cited art in view of the previously submitted claim set. The interview proved useful in further understanding the Examiner's interpretation of the cited art. Applicants have relied upon the communications which transpired during the interview in order to amend the above-mentioned claims.

The Final Office Action mailed June 7, 2011, has been received and its contents carefully reviewed. From the Summary page, claims 1-20 were pending and indicated as rejected. The Information Disclosure Statement filed January 1, 2011, has been considered.

By this Response, claims 1 and 12 have been amended, and claims 8 and 18 have been canceled. No statutory new matter has been added. Support for all amendments can be found in the originally filed Specification.

In particular, the features of claims 8 and 18 have been incorporated into claims 1 and 12, respectively. By so doing, it is respectfully submitted that all of the rejections, other than those mentioned in paragraphs 10 and 11 of the last Office Action are moot. Thus, arguments are submitted traversing the combinations provided in paragraphs 10 and 11 of the last Office Action.

Lastly, Applicants submit a Request for Continued Examination with the designated fee to ensure timely consideration of the above-mentioned amendments.

35 U.S.C. § 112, First paragraph

Claims 1-20 stand rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. The rejection as to claims 8 and 18 is moot upon cancelation. The rejection as to claims 1-7, 9-17 and 19-20 is respectfully traversed.

Regarding independent claims 1 and 12, the Examiner has requested precise language to delineate when plasma is excluded from the process. The Examiner provided suggestions on page 4

of the Action. By this response, Applicants have amended each of claims 1 and 12 to include a temporal sequence of when a plasma process is excluded from the process. Applicants also have reformatted claims 1 and 12 to positively recite the process and structural elements, respectively, to more accurately convey the temporal sequence to one of ordinary skill in the art. Similar arguments for independent claims 1 and 12 also are advanced for claims 2-7, 9-11, 13-17 and 19-20 depending thereform. For at least these reasons, withdrawal of the rejection earnestly is solicited.

35 U.S.C. § 112, Second paragraph

Claims 1-11 stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The rejection as to claim 8 is moot upon cancelation. The rejection as to claims 1-7 and 9-11 is respectfully traversed.

Claim 1 has been amended to correct antecedent basis regarding the phrase, "a plasma polymer coating" on line 5. In addition, claim 1 has been amended, as discussed above with regard to the written description rejection, by including a temporal sequence when plasma is excluded from the process. For at least these reasons, claim 1, and claims 2-11 depending therefrom, overcome the instant rejection. Withdrawal of the rejection kindly is solicited.

35 U.S.C. § 102 (b) Rejections in view of Timmons et al.

Claim **12** stands rejected under 35 U.S.C. §102(b) as being clearly anticipated by Timmons, et al. (US 5,876,753.) Claims **1** and 9 stand *ambiguously* rejected under 35 U.S.C. 102(b) as being anticipated by Timmons, et al. (US 5,876,753). Both rejections respectfully are traversed.

Independent process claim 1 and independent product claim 12 have been amended to recite a plasma polymer coating containing residual unpolymerized polymerizable functional meth(acrylate) groups. Timmons et al. clearly does not teach Applicants' claimed coating. Because each of the elements is not taught or disclosed by Timmons et al., the anticipation rejection must fail. Thus, withdrawal of the rejections as to independent claims 1 and 12, and claim 9 depending upon claim 1 is kindly requested.

35 U.S.C. § 102 (b) and 35 U.S.C. §103(a) Rejections in view Grobe et al. or Pasic et al.

Claims **1**, 11, and **12** stand rejected under 35 U.S.C. §102(b) as being clearly anticipated by Grobe III, et al. (US 6,200,626) or Pasic, et al. (US 6,582,754). Claims 2-4, 10 and 13-15 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Grobe et al. or Pasic et al. The rejections respectfully are traversed.

Independent process claim 1 and independent product claim 12 have been amended to recite a plasma polymer coating containing residual unpolymerized polymerizable functional meth(acrylate) groups. Grobe et al. or Pasic et al. clearly does not teach Applicants' claimed coating. Because each and every element is not expressly taught by Grobe et al. or Pasic et al., the anticipation rejection must fail. Since Applicants' claimed features mentioned above also are not suggested or disclosed by Grobe et al or Pasic et al., the obviousness rejection must fail. Thus, withdrawal of the rejections as to independent claims 1 and 12, and claims 2-4, 10-11 and 13-15 depending thereon kindly is requested.

35 U.S.C. § 102 (b) and 35 U.S.C. §103(a) Rejections in view of Daimon et al.

Claims **12** and 16-17 stand rejected under 35 U.S.C. §102(b) as being anticipated by Daimon et al. (US 4,891,264). Claims **1**, 5-7, 9-**12**, and 16-17 stand rejected under 35 U.S.C. §102(b) as anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over Daimon et al. (US 4,891,264), optionally as evidenced by Wu, et al. (US 5,922,161) set forth previously in sections 11 and 9 of the December 21, 2010 and June 21, 2010 rejections, respectively. Claims 2-4 and 13-15 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Daimon et al. Alternatively, claims 1-7 and 9-17 stand rejection under 35 U.S.C. 103(a) as being unpatentable over Daimon et al. in view of Timmons et al. or Grobe et al. or Pasic et al. Each of these rejections respectfully is traversed.

Independent process claim 1 and independent product claim 12 have been amended to recite "*a plasma polymer coating containing residual unpolymerized polymerizable functional meth(acrylate) groups.*" None of Daimon et al., Wu et al., Timmons et al., Grobe et al., or Pasic et al. teach or disclose Applicants' claimed coating. Because each and every element clearly is not taught in Daimon et al.,

Wu et al., Timmons et al., Grobe et al. or Pasic et al., the anticipation rejection must fail. Because the claimed features mentioned above also are not suggested or disclosed in Grobe et al. or Pasic et al., the obviousness rejection must fail. Thus, withdrawal of the rejections as to independent claims 1 and 12, and claims 2-4, 10-11 and 13-15 depending thereon kindly is requested.

35 U.S.C. § 102 (b) and 35 U.S.C. §103(a) Rejections in view of Vargo et al.

Claims **1**, 5-7, 9, 11-**12**, and 16-17 stand rejected under 35 U.S.C. §102(b) as being anticipated by Vargo et al. (US 6,428,887), as evidence by Gardella Jr., et al. (US 4,946,903). Claims 2-4, 10 and 13-15 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Vargo et al. as evidenced by Gardells et al. These rejections respectfully are traversed.

Independent process claim 1 and independent product claim 12 have been amended to recite "*a plasma polymer coating containing residual unpolymerized polymerizable functional meth(acrylate) groups.*" Neither Vargo et al. nor Gardella et al. teach or suggest the claimed coating. Because each and every element clearly is not taught by Vargo et al. or Gardella et al., the anticipation rejection must fail. Because the claimed features mentioned above also are not suggested or disclosed in Grobe et al. or Pasic et al., the obviousness rejection must fail. Thus, withdrawal of the rejections as to independent claims 1 and 12, and claims 2-7, 9-11 and 13-15 depending thereon kindly is requested.

35 U.S.C. §103(a) Rejection in view of Daimon et al. and McGee

Claims 1-4 and 13-15 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Daimon et al. (US 4,891,264), in view of McGee (US 2003/0207121). The rejection respectfully is traversed.

Independent process claim 1 recites "*a plasma polymer coating containing residual unpolymerized polymerizable functional meth(acrylate) groups.*" Daimon et al. and McGee do not teach or suggest the claimed coating. Accordingly, the obviousness rejection in view of the combination must fail. Withdrawal of the rejection as to independent claim 1 and claims 2-4 and 13-15 kindly is requested.

35 U.S.C. § 103 Rejections in view of Daimon et al. in combination with plural art provided in paragraph 10 Office Action dated June 7, 2011

Claims 8 and 18-20 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Daimon et al. (US 4,891,264), optionally considering McGee (US 2003/0207121), or Timmons, et al. (US 5,876,753), or Grobe III, et al., (US 6,200,626), or Pasic, et al. (US 6,582,754), or Wu, et al. (US 5,922,161) as applied to claims 1-7, and 9-17 above, and further in view of Goodwin, et al. (WO 02/28548) or Willis, et al. (WO 00/78469) or Kamel, et al. (US 5,080,924). The rejection as to claims 8 and 18 is moot upon cancelation. Each of the rejections against claims 19 and 20 respectfully is traversed. Additionally, arguments are presented in view of patentability for amended claims 1 and 12 in view of the incorporation of canceled features in claims 8 and 18, respectively.

As mentioned in the introductory paragraphs of the Remarks, process claim 1 and product claim 12 have been amended to include the features of canceled claims 8 and 18, respectively. The rejection of claims 8 and 18 is therefore moot.

Amended claim 1 recites, "*A method of forming a coated substrate comprising:*

providing a substrate;

forming plasma polymer coating on said substrate via plasma polymerization, said coating containing residual unpolymerized polymerizable functional meth(acrylate) groups which remain in the coating after said plasma polymerization;

applying a radiation curable composition to said plasma polymer-coated substrate; and

radiation curing the radiation curable composition such that at least one component of said radiation curable composition forms a reaction product with said residual unpolymerized polymerizable functional meth(acrylate) groups,

wherein no additional plasma is applied to said plasma polymer-coated substrate before applying said radiation curable composition."

Amended claim 12 recites, "*A radiation cured, coated substrate comprising:*

a substrate;

a plasma polymer coating containing residual unpolymerized polymerizable functional meth(acrylate) groups formed on said substrate by plasma polymerization; and

a radiation cured composition applied on the plasma polymer-coated substrate, wherein

a reaction product is formed between a portion of the plasma polymer coating and a portion of the radiation cured composition upon radiation curing the radiation cured composition, and

no additional plasma is applied to the plasma polymer-coated substrate before applying the radiation cured composition."

The Examiner asserts on page 22 of the Office Action that Daimon does not teach any specific materials for the plasma polymerization adhesion layer. Reliance of this feature is placed in each of Willis et al. or Goodwin et al. or Kamel et al.

A. Regarding Willis et al., the Examiner alleges that the coating "retains reactive epoxy groups after plasma polymerization deposition" and "seen to provide cross-linking means via their taught functional groups that remain on the surface after the taught plasma polymerization of materials such as various epoxy and/or acrylate compounds" See pgs. 22-23 of the last Office Action.

While plasma polymerization techniques in Willis et al. may use materials such as glycidyl methacrylate, there is no teaching or suggestion of reactive meth(acrylate) groups retained in the coating. Rather, Willis appears only to refer to epoxy groups for purposes of adhesion. See pgs. 8-9, lines 32-16. In the disclosed embodiment, epoxy coatings are applied to both surfaces in addition to a coupling agent introduced therebetween which reacts with the epoxy groups in order to produce adhesion between surfaces. Therefore, it is respectfully submitted that Willis et al. does not teach or suggest the claimed features of a "*a plasma polymer coating containing residual unpolymerized polymerizable functional meth(acrylate) groups which remain in the coating after said plasma*

polymerization". Accordingly, the combination of Damon et al. and Willis et al. does not teach or suggests the features of claims 1 and 12.

Since Applicants' coating is not taught or suggested by Willis et al., it is also submitted that the claimed "*reaction product*" defined in claims 1 and 12 also is deficient in the combination of Damon et al. (and other cited references herein) and Willis et al.

For at least these reasons the obviousness rejection must fail. Withdrawal of the rejection kindly is solicited.

B. The Examiner purports that Goodwin et al.'s organic materials inclusive of glycidyl methacrylate or halogenated alkenes "provide cross-linking means via their taught functional or reactive groups that remain on the surface after the taught plasma polymerization of materials." See pgs. 22-23 of the last Office Action. It appears the Examiner may be relying upon the theory of inherency to allege reactive groups remaining on the surface after plasma polymerization.

When relying upon the theory of inherency, a basis in fact and/or technical reasoning must be provided to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." *Ex parte Levy,* 17 USPQ 2d 1461, 1464 (Bd. Pat. App. & Inter. 1990). The requirements of inherency are not met here because both liquid and solid atomized coating-forming materials are used to form substrate coatings in Goodwin et al. Based on these coating-forming materials, there is no reasonable suggestion that reactive groups remaining on the surface after plasma polymerization of materials necessarily flows therefrom. Therefore, it is respectfully submitted that Goodwin et al. does not expressly or inherently describe, "*a plasma polymer coating containing residual unpolymerized polymerizable functional meth(acrylate) groups which remain in the coating after said plasma polymerization*". Accordingly, the combination of Damon et al. (and other cited references herein) and Goodwin et al. does not teach or suggest the features of claims 1 and 12.

Since Applicants' coating is not taught or suggested by Goodwin et al., it is also submitted that the claimed "*reaction product*" defined in claims 1 and 12 also is deficient in the combination of Damon et al. and Goodwin et al.

For at least these reasons the obviousness rejection must fail. Withdrawal of the rejection kindly is solicited.

C. It is respectfully submitted that the motivation to combine Kamel et al. with Damon et al. (and other cited references herein) is improper.

As characterized by the Examiner on page 12 of the last Office Action, Damon et al. cures coatings by one of many options such as UV and electron beam. On the other hand, Kamel et al. suggests, "radiation is **not** suitable when it is desired (as it is here) to modify only the surface of the polymer material" [**Emphasis Added**]. See col. 6, ll. 5-16. Therefore, Kamel et al. teaches away from applying radiation for modifying the surface of a polymer. Because Damon et al. exposes coatings to radiation in order to modify them and Kamel et al. clearly teaches away from exposing surfaces to radiation, one having ordinary skill in art would not have been motivated to combine these references. Accordingly, the *prima facie* case of obviousness must fail. In view of the foregoing, the rejections should be withdrawn against claims 19 and 20. Also reconsideration of amended claims 1 and 12 courteously is solicited.

35 U.S.C. § 103 Rejections in view of Vargo et al. as provided in paragraph 11 of the Office Action dated June 7, 2011

Claims 8 and 18-20 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Vargo et al. (US 6,428,887), as applied to claims 1-7, and 9-17 above, and further in view of Goodwin, et al. (WO 02/28548). Claims 8 and 18 have been canceled and their features incorporated into claims 1 and 12, respectively. The rejection as to claims 8 and 18 is therefore moot. The rejection as to claims 19 and 20 is traversed. Additionally, arguments are presented in view of patentability for amended claims 1 and 12.

It is respectfully submitted that Goodwin et al. does not teach or suggest the features of "*a plasma polymer coating containing residual unpolymerized polymerizable functional meth(acrylate) groups which remain in the coating after said plasma polymerization*".

On page 23 of the Office Action the Examiner asserts that Vargo et al. does not teach the use of plasma polymerized epoxies or acrylates to provide the functional adhesion promoting layer. The Examiner alleges that Goodwin shows that epoxyacrylate compounds and halogenated compounds can equivalently be employed when deposited by plasma polymerization for adhesion purposes and provide the required functional adhesion groups. As mentioned above with respect to the combination of Goodwin et al. and Damon et al. (and other secondary references), it appears the Examiner is relying upon the theory of inherency to suggest reactive groups remaining on the surface after plasma polymerization.

The requirements of inherency are not met here because both liquid and solid atomized coating-forming materials are used to form substrate coatings in Goodwin et al. Based on these coating-forming materials, there is no reasonable suggestion that reactive groups remaining on the surface after plasma polymerization of materials necessarily flows therefrom. Therefore, it is respectfully submitted that Goodwin et al. in combination with Vargo et al. (and other cited references herein) would not have rendered either of claims 1 or 12 *prima facie* obvious.

Since Applicants' coating is not taught or suggested by Goodwin et al., it is also submitted that the claimed "*reaction product*" defined in claims 1 and 12 also is deficient based on the combination of Vargo et al. and Goodwin et al.

For at least these reasons the obviousness rejection must fail. In view of the foregoing, the rejection should be withdrawn against claims 19 and 20. Also reconsideration of amended claims 1 and 12 courteously is solicited.

Conclusion

Applicants believe the foregoing amendments and remarks place the application in condition for allowance and early, favorable action is respectfully solicited. If for any reason the Examiner finds the application other than in condition for allowance, the Examiner is requested to call the undersigned attorney at (202) 496-7500 to discuss the steps necessary for placing the application in condition for allowance. All correspondence should continue to be sent to the below-listed address.

If these papers are not considered timely filed by the Patent and Trademark Office, then a petition is hereby made under 37 C.F.R. §1.136, and any additional fees required under 37 C.F.R. §1.136 for any necessary extension of time, or any other fees required to complete the filing of this response, may be charged to Deposit Account No. 50-0911. Please credit any overpayment to deposit Account No. 50-0911.

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